

said second cam controls at least a part of the opening and closing cycle of said poppet valve, said coupling device maintaining the angular phase positions of said first and second cams regardless of which cam is controlling the opening and closing cycle of said poppet valve.

Cancel Claims 2 and 4 without prejudice.

Amend Claim 5 as follows:

5. (Amended) An internal combustion engine as set forth in claim 3 wherein the coupling device shifts the axis about which the second cam rotates when the first cam controls the entire opening and closing cycle of the poppet valve so that the second cam does not control the opening and closing cycle of said poppet valve.

Amend Claim 6 as follows:

6. (Amended) An internal combustion engine having a combustion chamber, at least one gas flow passage communicating with said combustion chamber through a valve seat, a poppet valve for controlling the flow through said valve seat, a camshaft journaled for rotation about a camshaft axis, a first cam having a first lift characteristic fixed for rotation with said camshaft, a second cam associated with said camshaft for relative rotation, said second cam has a second lift characteristic different from said first lift characteristic of said first cam, a valve actuator associated with said first and said second cams for transmitting their rotational movements to reciprocation of said poppet valve, and a coupling device for selectively permitting relative movement between said camshaft and said second cam so that said first cam controls the entire opening and closing cycle of said poppet valve and for coupling said second cam for rotation with said camshaft about said camshaft axis so that said second cam controls at least a part of the opening and closing cycle of said poppet valve, said coupling device comprising an eccentric bushing having a cylindrical bore coaxially received on said camshaft and an cylindrical outer surface eccentrically disposed to said cylindrical bore and received in a complimentary bore formed in said second cam and a selectively operable lock for coupling one of said eccentric bushing and said second cam for rotation with said camshaft so that both said second cam and said eccentric bushing rotate in unison with said camshaft.

Amend Claim 15 as follows:

15. (Amended) An internal combustion engine having a combustion chamber, at least one gas flow passage communicating with said combustion chamber through a valve seat, a poppet valve for controlling the flow through said valve seat, a camshaft journaled for

rotation about a camshaft axis, a first cam having a first lift characteristic fixed for rotation with said camshaft, a second cam associated with said camshaft for relative rotation, said second cam has a second lift characteristic different from said first lift characteristic of said first cam, a valve actuator associated with said first and said second cams for transmitting their rotational movements to reciprocation of said poppet valve, a coupling device for selectively permitting relative movement between said camshaft and said second cam so that said first cam controls the entire opening and closing cycle of said poppet valve and for coupling said second cam for rotation with said camshaft about said camshaft axis so that said second cam controls at least a part of the opening and closing cycle of said poppet valve, a second poppet valve for opening and closing a second valve seat in said combustion chamber, and a third cam and wherein said cams are juxtaposed axially on said camshaft and one of said first and said second cams has cam portions for controlling the opening and closing cycle of both of said poppet valves, the other of said first and second cams controlling the opening and closing cycle of only one of said poppet valves and said third cam controls at least a portion of the opening and closing cycle of the other of said poppet valves.

REMARKS

The foregoing amendment is being submitted so as to present claims that are clearly patentable over Japanese published application 6-307216, published November 1, 1994. The reference does not show the combinations now recited by the amended claims. It is also submitted that these combinations are not obvious from the art listed on the IDS.

Favorable action is most courteously solicited.

Respectfully submitted,



Ernest A. Beutler
Registration No: 19901
500 Newport Center Drive
Suite 945
Newport Beach, Ca 92660
(949) 717-4821 Pacific Time